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# **The long-term impact of bullying victimization on mental health**

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There is little doubt today that being bullied in childhood is an adverse experience that casts a shadow on children's and adolescents' mental health and wellbeing. After several decades of general skepticism about the true impact of bullying victimization, accumulating evidence demonstrates a detrimental effect on youth's mental health and reveals other poor outcomes including low self-esteem, self-harm and academic failure. Recently, emerging findings have pointed toward a possible long-lasting effect of bullying beyond the childhood and adolescent periods. The impact of bullying on the young victims may therefore persist once the bullying has long stopped. This conclusion would imply a profound shift for prevention and intervention strategies, which commonly focus on the perpetrators of bullying - the bullies - in the direction of greater attention to the victims, with the aim of reducing the burden of bullying victimization on individual lives and societal costs.

To date, three longitudinal cohorts have documented the adult outcomes of bullying victimization in childhood. These studies indicated that young victims of bullying have higher rates of agoraphobia, depression, anxiety, panic disorders and suicidality in their early to mid-20's, compared to those who have not been bullied in childhood <sup>(1,2,3)</sup>. Child victims of bullying also have an increased risk of receiving psychiatric hospital treatment and using psychiatric medications in young adulthood <sup>(4)</sup>. Supporting these findings, another study reported that victims of bullying in childhood report high levels of psychological distress at age 23 but, and most importantly, also at age 50 <sup>(5)</sup>. Adults who were victims of frequent bullying in childhood had an increased prevalence of poor psychiatric outcomes at midlife, including depression and anxiety disorders, and suicidality. The effects were small but similar to those of other adverse childhood exposures measured in this cohort study such as placement in public or substitute care or exposure to multiple adversities within the family. These findings are based on observational data and thus do not allow causal inferences. The consistency of the findings across 3 separate cohorts is, however, compelling. The three longitudinal cohorts (1) used prospective measures of bullying victimization in childhood and later outcomes in adulthood; (2) controlled for mental health problems in childhood, indicating that bullying victimization contributes either

to new or to additional mental health problems in later years; (3) accounted for a range of potential confounders that might also explain poor later outcomes in young victims of bullying including childhood IQ, parental SES and gender; (4) are representative of the population of three different countries. Conclusions from these studies cannot be ignored.

The developmental processes that translate childhood bullying victimization into health problems later in the life course are poorly understood. To identify targets for intervention programs aimed at reducing the harmful outcomes of being bullied in childhood, we need a better understanding of these processes. One such possible process relates to hypotheses derived from theories of the biological embedding of stress <sup>(6)</sup>. Studies of MZ twins discordant for bullying exposure indicate that bullying victimization in childhood is associated with a blunted cortisol response <sup>(7)</sup>, which in turn is associated with problems in social interaction and aggressive behavior among children who were victims of bullying or physical maltreatment <sup>(8)</sup>. But what process can activate this reduction in cortisol levels after children experience bullying repeatedly over time? Using the same group of twins discordant on bullying victimization, a further study showed that the bullied twins had higher methylation levels on the serotonin transporter gene (*SERT*), a neurotransmitter involved in mood regulation and depression, compared to their non-bullied co-twins <sup>(9)</sup>. In addition, findings showed that higher levels of methylation were associated with lower levels of cortisol response. Effects of this kind may serve as an interface between childhood bullying victimization and later vulnerability to stress and psychopathology.

Other studies have indicated that those who were victimized by bullies also showed problems with social relationships, poor physical health and financial difficulties in adulthood <sup>(5,10)</sup>. This suggests that other processes could involve a detrimental effect of being bullied in childhood on life opportunities for building the human and social capital young children need to overcome adversity and live successful and fulfilling lives. Another possibility refers to the fact that poor health outcomes are a function of symptoms that developed at the time of the bullying exposure. For example, mental health problems like depression and

anxiety are likely to persist, especially when they manifest early in life <sup>(11)</sup>. Untreated signs of psychological distress that appear early in life, or markers of physical illnesses, may be the precursors to a life of poor health, both mental and physical. And yet, other possible processes point to the possibility of poly- and re-victimization, whereby being bullied in childhood may generate further abuse from peers or adults, forming the first stage in a cycle of victimization that perpetuates over time and across situations <sup>(12)</sup>. Although evidence indicates that each different form of abuse independently contributes to poor outcomes, it may be the accumulation of various types of violence exposure in childhood that is at the source of mental health problems in later life.

Although described separately, these processes are likely to operate together in contributing to adverse outcomes. Multidisciplinary research across different levels, from biological embedding of stress to poly-victimization and genetic influences, will be essential to understand the underpinning of mental health difficulties among victims of bullying. Animal models may provide useful insights, because they allow for a better control of the bullying experience and they offer an opportunity to explore biological mechanisms in more depth. For example, an experiment on mice demonstrated the role of brain-derived neurotrophic factor (*BDNF*) in the mesolimbic dopamine pathway to explain social aversion among mice exposed to repeated aggression <sup>(13)</sup>. Studies like this one will guide and orient future human research aimed at understanding the development of mental health difficulties in young victims of bullying.

Tackling bullying behaviors could not only reduce children's and adolescents' mental health symptoms but also prevent psychiatric and socio-economic difficulties in adulthood. It is a truism to emphasize that further work is needed to understand why and how young people's aspirations are often damaged by this too common adverse social experience. Anti-bullying programs show promise in tackling bullying behaviors <sup>(14)</sup>. However, the chances of eradicating bullying completely are minimal and we need to acknowledge that despite such programs, a considerable proportion of young people will not escape this form of abuse in their youth. Intervention efforts should also focus on limiting distress among young victims and possibly by the same token, preventing long-lasting

difficulties in later life. When this is not possible, targeted interventions could help with reversing the harmful impact of bullying when the victims enter adulthood. A new innovative strategy could aim at preventing children from becoming the targets of bullying in the first place. Such a public health approach might be a more effective way to reduce the bullying-related burden.

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